

Rec'd PCT/PTO 24 MAR 2005

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| U. S. PATENT AND TRADEMARK OFFICE<br>U.S. DEPARTMENT OF COMMERCE<br><br><b>TRANSMITTAL LETTER TO THE UNITED STATES<br/>DESIGNATED/ELECTED OFFICE (DO/EO/US)<br/>CONCERNING A FILING UNDER 35 U.S.C. 371</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                 | ATTORNEY'S DOCKET NUMBER<br><br>21500P                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                 | U.S. APPLICATION NO. (If known, see 37 CFR 1.5)<br><br><b>10/573330</b> |
| INTERNATIONAL APPLICATION NO.<br>PCT/US2004/31326                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | INTERNATIONAL FILING DATE<br>September 24, 2004 | PRIORITY DATE CLAIMED<br>September 23, 2003                             |
| TITLE OF INVENTION<br>OPTIMIZED EXPRESSION OF HPV 45 L1 IN YEAST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                 |                                                                         |
| APPLICANT(S) FOR DO/EO/US<br>Janine T. Bryan, Michelle K. Brownlow, Loren D. Schultz, Kathrin U. Jansen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                 |                                                                         |
| <p><b>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:</b></p> <ol style="list-style-type: none"><li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li><li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li><li>3. <input type="checkbox"/> This is an express request to begin national examination procedures [35 U.S.C. 371(f)]. The submission must include items (5), (6), (9) and (21) indicated below.</li><li>4. <input checked="" type="checkbox"/> The US has been elected (PCT Article 31).</li><li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed [35 U.S.C. 371(c)(2)]<ol style="list-style-type: none"><li>a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li><li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li><li>c. <input checked="" type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li></ol></li><li>6. <input type="checkbox"/> An English language translation of the International Application as filed [35 U.S.C. 371(c)(2)].<ol style="list-style-type: none"><li>a. <input type="checkbox"/> is attached hereto</li><li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li></ol></li><li>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 [35 U.S.C. 371(c)(3)].<ol style="list-style-type: none"><li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li><li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li><li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li><li>d. <input type="checkbox"/> have not been made and will not be made.</li></ol></li><li>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 [35 U.S.C. 371(c)(3)].</li><li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) [35 U.S.C. 371(c)(4)].</li><li>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 [35 U.S.C. 371(c)(5)].</li></ol> <p><b>Items 11 to 20 below concern other document(s) or information included:</b></p> <ol style="list-style-type: none"><li>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li><li>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li><li>13. <input checked="" type="checkbox"/> A preliminary amendment.</li><li>14. <input type="checkbox"/> An Application Data Sheet under 37 CFR 1.76.</li><li>15. <input type="checkbox"/> A substitute specification.</li><li>16. <input type="checkbox"/> A power of attorney and/or change of address letter.</li><li>17. <input checked="" type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13<sup>ter</sup>.2 and 37 CFR 1.821 - 1.825.</li><li>18. <input type="checkbox"/> A second copy of the published International Application under 35 U.S.C. 154(d)(4).</li><li>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</li><li>20. <input type="checkbox"/> Other items or information:</li></ol> |                                                 |                                                                         |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                                                               |                                                                                                                                                                                                                                                                             |                                    |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------|
| U.S. APPLICATION NO. (If known, see 37 CFR 1.5)<br><div style="font-size: 1.5em; font-weight: bold; text-align: center;">10/573330</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              | INTERNATIONAL APPLICATION NO.<br>PCT/US2004/31326                             |                                                                                                                                                                                                                                                                             | ATTORNEY'S DOCKET NUMBER<br>21500P |                     |
| The following fees are submitted:<br>21. <input checked="" type="checkbox"/> Basic national fee.....\$300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                                                               |                                                                                                                                                                                                                                                                             | <b>CALCULATIONS</b><br>\$300.00    | <b>PTO USE ONLY</b> |
| 22. <input checked="" type="checkbox"/> Examination fee (37 CFR 1.492(c))<br>If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4).....\$0<br>All other situations.....\$200                                                                                                                                                                                                                                                                                                 |              |                                                                               |                                                                                                                                                                                                                                                                             | \$200.00                           |                     |
| 23. <input checked="" type="checkbox"/> Search fee (37 CFR 1.492(b))<br>If the written opinion of the ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4).....\$0<br>Search fee [37 CFR 1.445(a)(2)] has been paid on the international application to the USPTO as an International Searching Authority.....\$100<br>International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB .....\$400<br>All other situations.....\$500 |              |                                                                               |                                                                                                                                                                                                                                                                             | \$100.00                           |                     |
| <b>TOTAL OF 21, 22 and 23=</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |                                                                               |                                                                                                                                                                                                                                                                             | \$600.00                           |                     |
| <input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof.                                                                                                                                                                                                                                                                                                                                |              |                                                                               |                                                                                                                                                                                                                                                                             |                                    |                     |
| Total Sheets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Extra Sheets | Number of each additional 50 or fraction thereof (round up to a whole number) | RATE                                                                                                                                                                                                                                                                        |                                    |                     |
| - 100 =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0 /50        | 0 = 0                                                                         | X \$250.00                                                                                                                                                                                                                                                                  | \$0.00                             |                     |
| Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date [37 CFR 1.492(e)].                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                                                                               |                                                                                                                                                                                                                                                                             |                                    |                     |
| CLAIMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | NUMBER FILED | NUMBER EXTRA                                                                  | RATE                                                                                                                                                                                                                                                                        |                                    |                     |
| Total Claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 22 - 20 =    | 2                                                                             | X \$50.00                                                                                                                                                                                                                                                                   | \$100.00                           |                     |
| Independent Claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2 - 3 =      | 0                                                                             | X \$200.00                                                                                                                                                                                                                                                                  | \$0.00                             |                     |
| MULTIPLE DEPENDENT CLAIM(S) (if applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |                                                                               | + \$360.00                                                                                                                                                                                                                                                                  |                                    |                     |
| <b>TOTAL OF ABOVE CALCULATIONS (SUBTOTAL)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                                                                               |                                                                                                                                                                                                                                                                             | = \$700.00                         |                     |
| Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                                                                               |                                                                                                                                                                                                                                                                             | +                                  |                     |
| <b>TOTAL NATIONAL FEE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                                                               |                                                                                                                                                                                                                                                                             | = \$700.00                         |                     |
| Fee for recording the enclosed assignment [37 CFR 1.21(h)]. The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property.                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |                                                                               |                                                                                                                                                                                                                                                                             | +                                  |                     |
| <b>TOTAL FEES ENCLOSED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |                                                                               |                                                                                                                                                                                                                                                                             | = \$700.00                         |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                                                               |                                                                                                                                                                                                                                                                             | Amount to be refunded:             |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                                                               |                                                                                                                                                                                                                                                                             | Amount to be charged:              |                     |
| a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed.<br>b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>13-2755</u> in the amount of <u>\$700.00</u> to cover the above fees.<br>A duplicate copy of this sheet is enclosed.<br>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to the Deposit Account No. <u>13-2755</u> . A duplicate copy of this sheet is enclosed.                                          |              |                                                                               |                                                                                                                                                                                                                                                                             |                                    |                     |
| <b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive [37 CFR 1.137(a) or (b)] must be filed and granted to restore the International Application to pending status.</b>                                                                                                                                                                                                                                                                                                                                                                            |              |                                                                               |                                                                                                                                                                                                                                                                             |                                    |                     |
| SEND ALL CORRESPONDENCE TO:<br><div style="border: 1px dashed black; padding: 2px; display: inline-block;">           Customer No. 000210         </div><br>MERCK & CO., INC.<br>Patent Department, RY60-30<br>P.O. Box 2000<br>126 East Lincoln Avenue<br>Rahway, New Jersey 07065-0970                                                                                                                                                                                                                                                                                                                  |              |                                                                               |                                                                                                                                                                                                                                                                             |                                    |                     |
| DATE: <u>March 24, 2006</u><br>PHONE #: <u>(732) 594-2583</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                                                                               | <div style="text-align: center;"> <br/>           SIGNATURE         </div> <div style="text-align: center;"> <u>Alysia A. Finnegan</u><br/>           NAME         </div> <div style="text-align: center;"> <u>48,878</u><br/>           REGISTRATION NUMBER         </div> |                                    |                     |

10/573330  
IAP9 Rec'd PCT/PTO 24 MAR 2006

Page 1A of TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING  
A FILING UNDER 35 U.S.C. 371

Attorney Docket No.: 21500P  
International Appln No.: PCT/US2004/31326  
International Filing Date: September 24, 2004  
Priority Date: September 29, 2003  
Title: OPTIMIZED EXPRESSION OF HPV 45 L1 IN YEAST

Inventors: Bryan, Janine T.  
Brownlow, Michelle K.  
Schultz, Loren D.  
Jansen, Kathrin U.

| EXPRESS MAIL CERTIFICATE                                                                                                                                                                                                                                                         |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| DATE OF DEPOSIT                                                                                                                                                                                                                                                                  | March 24, 2006   |
| EXPRESS MAIL NO.                                                                                                                                                                                                                                                                 | EV660606108US    |
| I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING<br>DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS<br>EXPRESS MAIL "POST OFFICE TO ADDRESSEE" ON THE ABOVE<br>DATE IN AN ENVELOPE ADDRESSED TO COMMISSIONER FOR<br>PATENTS P.O. BOX 1450, ALEXANDRIA, VIRGINIA 22313-1450. |                  |
| MAILED BY                                                                                                                                                                                                                                                                        | Kathy Kluthowski |
| DATE                                                                                                                                                                                                                                                                             | 3-24-06          |